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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,186	12/03/2001	Hyun Kyun Kim	P-0305	4452

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EXAMINER

PHAM, TUAN

ART UNIT PAPER NUMBER

2618

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/998,186	KIM, HYUN KYUN	
	Examiner	Art Unit	
	TUAN A. PHAM	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9-14 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-14, and 17-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-7, 9-14, and 17-20 have been considered but are moot in view of the new ground(s) of rejection.

2. In response to applicant's remark on page 8, Applicant argues that the examiner has fails to combine Markow et al. in view of Koizumi et al. and Koski et al. in claims 1, 5, and 7.

In response to applicant's arguments as stated above, the Examiner respectfully disagrees with the Applicant's argument. It appears applicant is attacking individual merits of Markow and Koski and concludes that there is no impetus to combine them. However, the 103 rejections is in consideration of Markow et al. in view of Koizumi et al. and Koski et al. as a whole. One cannot show non-obviousness by attacking references individually. In re Keller, 208 USPQ 871 (CCPA 1981). The test for obviousness is not whether features of one reference may be bodily incorporated into the other to produce claimed subject matter but simply what the combination of references makes obvious to one of ordinary skill in pertinent art. In re Bozek, (CCPA) 163 USPQ 545. The question in a rejection for obviousness on a combination of references is what secondary reference would teach one skilled in the art and not whether its structure could be bodily substituted in basic reference structure. In re Richman, 165 USPQ 509 (CCPA 1970). In this regard, the intent of Koski as a secondary teaching is not to combine its structural features into Markow, but rather to use the teaching of Koski to process the speech

signal in a mobile phone. Therefore, the combination of Markow et al. in view of Koizumi et al. and Koski et al. are proper.

In response to applicant's remark on page 8, Applicant argues that the examiner has apparently engaged in hindsight reasoning to combine Markow et al. in view of Koizumi et al. and Koski et al. references.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In this case, the examiner has established a strong prima facie case of obviousness, and provides proper suggestions to combine Markow et al. in view of Koizumi et al. and Koski et al.. Therefore, the combination of Markow et al. in view of Koizumi et al. and Koski et al. are proper, and it is not hindsight as arguing by applicant.

In response to applicant's remark on page 9, Applicant argues that the examiner has fails to state that there is no motivation to combine of Markow et al. in view of Koizumi et al. and Koski et al. in claims 1, 5, and 7.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention

where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to do so found in order to automatically adjust the sound volume to a constant optimum level as suggested by Koizumi at col.2, ln.10-14.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-2, 4, 7, 10-14, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (Patent No.: US 6,714,799, hereinafter, "Park") in view of Markow et al. (U.S. Patent No.: 6,459,942, hereinafter, "Markow") and further in view of Koizumi et al. (U.S. Patent No.: 5,745,583, hereinafter "Koizumi").**

Regarding claim 1, Park teaches a mobile terminal comprising (see figure 2):
a mobile phone (see figure 2);
a microphone (see figure 2, MIC);
a speaker (see figure 2, SPK); and

converting device to convert a digital signal into an analog signal (see figure 2, BBA 24 is included DAC and ADC, col.4, ln.1-40).

It should be noticed that Park fails to teach an equalizer adapted to adjust a timbre of the converted analog speech signal inputted thereto from the CODEC, the equalizer to receive analog speech signal from the microphone and the equalizer to provide the converted analog speech signals to the speaker; and a DSP supply a digital speech signal received from another mobile communication terminal to the CODEC. However, Markow teaches an equalizer adapted to adjust a timbre of the converted analog speech signal inputted thereto from the CODEC (see figure 4, equalizer 30, col.4, ln.11-36), the equalizer to receive analog speech signal from the microphone and the equalizer to provide the converted analog speech signals to the speaker (see figure 4, equalizer 28 receive the analog signal from the MIC 16, and equalizer 30 provide the signal convert from CODEC 36 to speaker 14, col.4, ln.11-36); and a DSP supply a digital speech signal received from another mobile communication terminal to the CODEC (see figure 4, DSP 32, , col.1, ln.9-15, col.4, ln.11-36, this system capable of handling a audio conferencing).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Marko into view of Park in order to reduce the acoustic signal traveling from speaker to MIC as suggested by Markow at col.1, ln.15-20.

Park and Markow, in combination, fails to teach a CPU adapted to supply a timbre control signal corresponding to a frequency band set by a user to the equalizer.

However, Koizumi teaches such features (see figure 1, microcomputer 11, equalizer 6, mode selecting key 16, memory 12, col.2, ln.40-67, col.3, ln.1-10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Koizumi, into view of Park and Markow in order to automatically adjust the sound volume to a constant optimum level as suggested by Koizumi at col.2, ln.10-14.

Regarding claim 2, Markow further teaches the speaker reproduces the speech signal applied thereto from the equalizer (see figure 4, speaker 14, equalizer 30, col.4, ln.11-36).

Regarding claim 4, Koizumi further teaches the frequency band set on a menu of the mobile communication terminal by the user (see figure 1, memory 12, col.2, ln.40-67, col.3, ln.1-10).

Regarding claim 7, Park teaches a mobile terminal comprising (see figure 2):
a mobile phone (see figure 2);
a microphone to receive speech signals (see figure 2, MIC);
a speaker to provide audio signals (see figure 2, SPK);
an antenna to receive/transmit signals (see figure 2, RF unit 22 with antenna);
and

converting device to convert a digital signal into an analog signal, the digital signal being based on a signal received from the antenna (see figure 2, BBA 24 is included DAC and ADC, col.4, ln.1-40).

It should be noticed that Park fails to teach an equalizing device coupled to the converting device to adjust the analog signal and to provide the adjusted analog signal to the speaker. However, Markow teaches such features (see figure 4, CODEC 34, equalizer 30, speaker 14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Markow into view of Park in order to reduce the acoustic signal traveling from speaker to MIC as suggested by Markow at col.1, ln.15-20.

Park and Markow, in combination, fails to teach an input device to allow a user to set a frequency band of the mobile terminal; and a control device to provide a timbre control signal to the equalizer, the timbre control signal being based on the frequency band set by the user. However, Koizumi teaches such features (see figure 1, microcomputer 11, equalizer 6, equalizer selecting means 14, mode selecting key 16, mode setting mean 13, memory 12, col.2, ln.40-67, col.3, ln.1-10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Koizumi, into view of Park and Markow in order to eliminate the need of the troublesome sound volume adjustment as suggested by Koizumi at column 2, lines 10-15.

Regarding claim 10, Markow further teaches converting device comprises a coder and decoder device (see col.4, ln.1-36).

Regarding claim 11, Koizumi further teaches the control device includes a processor and an equalizing control device (see figure 1, microcomputer 11 should be included processor, equalizer means 14).

Regarding claim 12, Koizumi further teaches the processor generates a control signal corresponding to the frequency band set by the user (see col.2, ln.40-67, col.3, ln.1-10).

Regarding claim 13, Koizumi further teaches the equalizing control device receives the control signal and provides the timbre control signal based on the received control signal (see col.2, ln.40-67, col.3, ln.1-10).

Regarding claim 14, Koizumi further teaches the control signal adjusts the frequency band of the analog signal input to the equalizing device according to the control signal (see col.2, ln.40-67, col.3, ln.1-10).

Regarding claim 17, Markow further teaches a microphone to provide an analog signal (see figure 4, MIC 16).

Regarding claim 18, Markow further teaches the equalizing device adjusts the analog signal from the microphone and the converting device converts the adjusted analog signal into a digital signal (see figure 4, MIC 16 is received analog signal from user, EQ 28, CODEC 36).

Regarding claim 19, Markow further teaches the equalizer is provided between the speaker and the CODEC and the equalizer is provided between the microphone and the CODEC (see figure 4, MIC 16, equalizer 28, CODEC 34, equalizer 30, speaker 14).

5. Claims 5-6, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Markow et al. (U.S. Patent No.: 6,459,942, hereinafter, "Markow") in view of Koizumi et al. (U.S. Patent No.: 5,745,583, hereinafter "Koizumi") and further in view of Koski et al. (U.S. Patent No.: 6,011,853).

Regarding claim 5, Markow teaches a speaker phone system (see figure 4), comprising: a microphone adapted to input a transmitting speech signal (see figure 4, MIC 16, col.4, ln.11-36); a speaker adapted to reproduce a received speech signal (see figure 4, speaker 14, col.4, ln.11-36); a CODEC adapted to perform an analog-digital conversion for the transmitting speech signal and a digital-analog conversion for the received speech signal (see figure 4, CODEC 34, col.4, ln.11-36); a CPU adapted to generate a control signal according to a frequency band (see figure 4, DSP 32, col.4, ln.11-36); the equalizer being connected to the microphone (see figure 4, MIC 16, equalizer 28), the speaker and the CODEC in such a fashion that the equalizer is disposed between the microphone/speaker and the CODEC (see figure 4, CODEC 34, speaker 14, MIC 16, equalizers 28, 30).

It should be noticed that Markow fails to clearly teach an equalizer control section adapted to generate a timbre control signal according to the control signal of the CPU; and an equalizer adapted to adjust a frequency band of the transmitting/received speech signals according to the timbre control signal inputted thereto from the equalizer control circuit. However, Koizumi teaches such features (see figure 1, microcomputer 11, equalizer 6, equalizer selecting means 14, mode selecting key 16, memory 12, col.2, ln.40-67, col.3, ln.1-10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Koizumi, into view of Markow in order to automatically adjust the sound volume to a constant optimum level as suggested by Koizumi at col.2, ln.10-14.

Markow and Koizumi, in combination, fails to teach a mobile phone. However, Koski teaches such feature (see figure 2, col.4, ln.48-50).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Koski, into view of Markow and Koizumi in order to allow for hands-free operation.

Regarding claim 6, Koizumi further teaches the frequency band set on a menu of the mobile communication terminal by the user (see figure 1, memory 12, col.2, ln.40-67, col.3, ln.1-10).

Regarding claim 20, Markow further teaches the equalizer to receive analog speech signals from the microphone and the equalizer to provide converted analog speech signals to the speaker (see figure 4, CODEC 34, speaker 14, MIC 16, equalizers 28, 30).

6. Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (Patent No.: US 6,714,799, hereinafter, "Park") in view of Markow et al. (U.S. Patent No.: 6,459,942, hereinafter, "Markow") and further in view of Koizumi et al. (U.S. Patent No.: 5,745,583, hereinafter "Koizumi") as applied to claims 1 and 7 above, and further in view of Dobbs et al. (U.S. Patent No.: 5,566,237, hereinafter, "Dobbs").

Regarding claims 3 and 9, Park, Markow, and Koizumi, in combination, fails to teach the equalizing device comprises a plurality of active filters. However, Dobbs teaches such features (see col.10, ln.49-51).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Dobbs, into view of Park, Markow, and Koizumi in order to filter out the unwanted signals.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A. Pham whose telephone number is

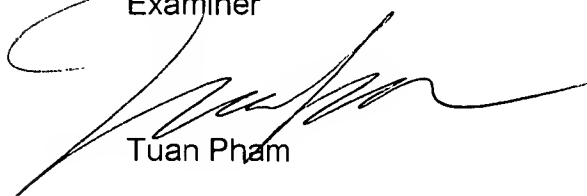
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(571) 272-8097. The examiner can normally be reached on Monday through Friday, 8:30 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have question on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit 2618
September 12, 2006
Examiner



Tuan Pham

Supervisory Patent Examiner
Technology Center 2600



Matthew Anderson